very rare because the conditions for the formation of a perfect ring are not often realized.

One great objection may be offered to this theory. The two arms of a spiral nebula are usually almost symmetrical. In the ordinary hypothesis in which the movement of the arms is assumed to be divergent this symmetry may be explained by the common origin of the two arms. In the hypothesis of Mr. See there is no way to account for it, for the two masses of cosmical vapor N and N′ which give rise to the nebula and which have met accidentally will not usually be equal. They ought then to give birth to an unsymmetrical nebula.

Mr. See thinks that originally the solar system was a spiral nebula of vast extent. The matter at its center first became agglomerated into particles which with the help of the resistance of the medium were condensed into asteroids, according to the process explained above, and then into planets, which are further increased by bombardment.[11]

Mr. See is led by analogy to believe that the spiral nebulas which are less advanced in their evolution than the solar system are composed of a vast number of very small bodies like the planets or even the moon. If we can not analyze these nebulas it will be because of the extremely small size of their component parts and not because these celestial objects are so excessively remote. Mr. Bohlin has tried to measure the parallax of the nebula of Andromeda (which is a spiral nebula of a continuous spectrum) and he has found it equal to 0″, 17, so that this nebula would be comparatively very near us. But considering how little accuracy the points on the nebulas admit of, can we regard this observation as conclusive and certain?

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NOTES ON THE CONSTRUCTION OF MAGIC SQUARES OF ORDERS IN WHICH n IS OF THE FORM $8p+2$.

Referring to the article in the last issue of *The Monist* by Messrs. Andrews and Frierson, under the above heading, it was shown that the minimum series to be used in constructing this class of squares is selected from the series 1, 2, 3,..... $(n+3)^2$, by

[11] Mr. See sees in the lunar craters signs of a bombardment produced at the surface of the moon by the fall of a large number of little satellites. He compares these craters to the marks left by great drops of rain in the mud (*op. cit.*, p. 342, plate XII).

discarding 3 rows and columns from the natural square of the order $n+3$.

It is not necessary, however, to discard the three central rows and columns, as was therein explained, there being numerous variations, the total number of which is always equal to $\left(\frac{n+2}{4}\right)^2$

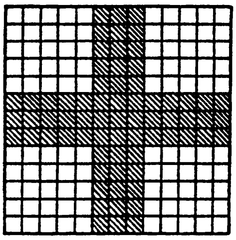

Fig. 1.

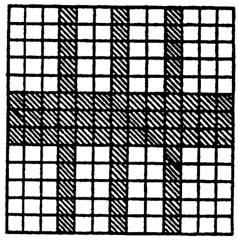

Fig. 2.

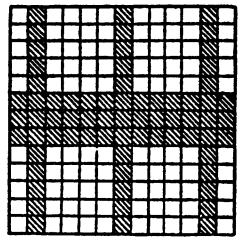

Fig. 3.

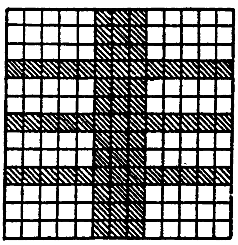

Fig. 4.

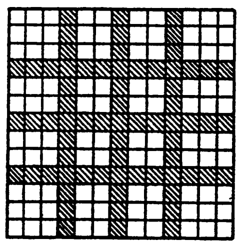

Fig. 5.

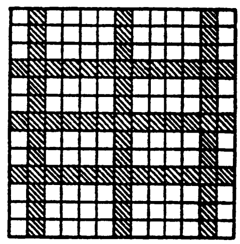

Fig. 6.

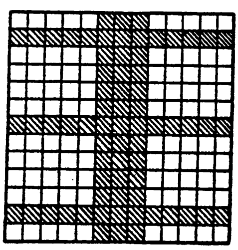

Fig. 7.

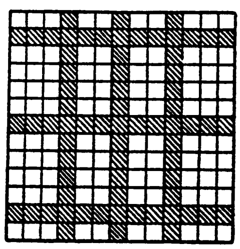

Fig. 8.

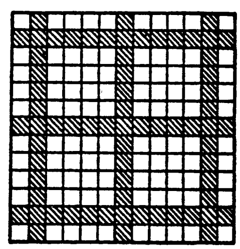

Fig. 9.

therefore the 10^2 can be constructed with 9 different series, the 18^2 with 25 different series, the 26^2 with 49 different series, and so on.

In Figs. 1 to 9 are shown all the possible variations of discarding rows and columns for the 10^2, Fig. I representing the series explained in the foregoing article.

The central row and column must always be discarded, the remaining two rows and columns can be cast out symmetrically in relation to their parallel central row or column and should be an

odd number of rows or columns from it. In other words, we cast out the central row, then on each side of it we cast out the 1st, 3d,

1	2	3	4	5				9	10	11	12	13

SERIES

13	2	11	4	5
1	12	3	10	9

RECTANGLE A

0	13	26	39	52				104	117	130	143	156

SERIES

156	13	130	39	52
0	143	26	117	104

RECTANGLE X

1	2	3		5	6		8	9		11	12	13

SERIES

13	2	3	9	8
1	12	11	5	6

RECTANGLE B

0	13	26		52	65		91	104		130	143	156

SERIES

156	13	26	104	91
0	143	130	52	65

RECTANGLE Y

1		3	4	5	6		8	9	10	11		13

SERIES

13	3	4	9	6
1	11	10	5	8

RECTANGLE C

0		26	39	52	65		91	104	117	130		156

SERIES

156	26	39	104	65
0	130	117	52	91

RECTANGLE Z

Fig. 10.

5th, or 7th, etc. rows from it, and irrespective of the rows, we do likewise with the columns.

In a manner already explained, numbers are selected according to the series desired and arranged in rectangles with which the magic square is constructed.

A set of rectangles with their respective series is shown in Fig. 10, and the following table will give directions for their use.

Series	Rectangles (See Fig. 10)
Fig. 1	A and X
Fig. 2	B and X
Fig. 3	C and X
Fig. 4	A and Y
Fig. 5	B and Y
Fig. 6	C and Y
Fig. 7	A and Z
Fig. 8	B and Z
Fig. 9	C and Z

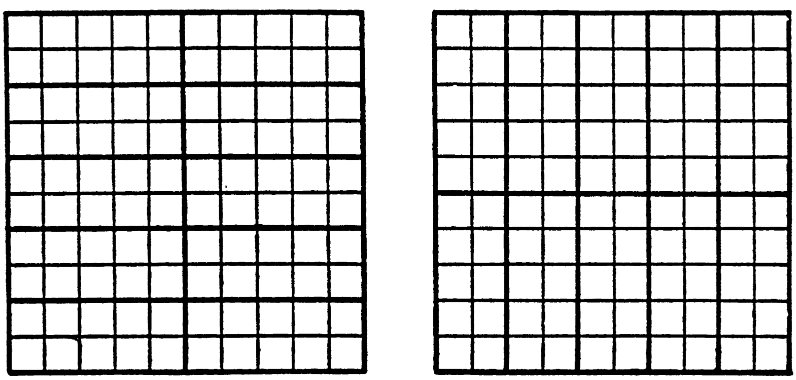

Fig. 11.

For example, suppose we were to construct a square, using the series denoted in Fig. 3. By referring to the table it is seen that we must employ rectangles C and X. By using the La Hireian method these rectangles are placed as shown in Fig. 11, care being taken to arrange them in respect to the final square, whether it is to be associated or non-associated.[1]

A non-associated square resulting from rectangles C and X is shown in Fig. 12. Another example by Mr. Andrews, using the path method is shown in Figs. 13, 14 and 15. Here a series corres-

[1] See preceding article.

ponding to Fig. 8 has been selected and the natural square is shown in Fig. 13, the heavy lines indicating the discarded rows and columns. The rows and columns are re-arranged according to the nu-

65	107	56	113	58	117	55	108	61	110
40	128	49	122	47	118	50	127	44	125
143	29	134	35	136	39	133	30	139	32
14	154	23	148	21	144	24	153	18	151
169	3	160	9	162	13	159	4	165	6
53	115	62	109	60	105	63	114	57	112
52	120	43	126	45	130	42	121	48	123
131	37	140	31	138	27	141	36	135	34
26	146	17	152	19	156	16	147	22	149
157	11	166	5	164	1	167	10	161	8

Fig. 12.

1	2	3	5	6	8	9	11	12	13
27	28	29	31	32	34	35	37	38	39
40	41	42	44	45	47	48	50	51	52
53	54	55	57	58	60	61	63	64	65
66	67	68	70	71	73	74	76	77	78
92	93	94	96	97	99	100	102	103	104
105	106	107	109	110	112	113	115	116	117
118	119	120	122	123	125	126	128	129	130
131	132	133	135	136	138	139	141	142	143
157	158	159	161	162	164	165	167	168	169

Fig. 13.

merical sequence of the continuous diagonals[1] of rectangles B and Z of Fig. 10, this re-arrangement being shown in Fig. 14.

1	2	11	9	6	13	12	3	5	8
27	28	37	35	32	39	38	29	31	34
118	119	128	126	123	130	129	120	122	125
105	106	115	113	110	117	116	107	109	112
92	93	102	100	97	104	103	94	96	99
157	158	167	165	162	169	168	159	161	164
131	132	141	139	136	143	142	133	135	138
40	41	50	48	45	52	51	42	44	47
53	54	63	61	58	65	64	55	57	60
66	67	76	74	71	78	77	68	70	73

Fig. 14.

5	162	1	168	11	161	6	157	12	167
100	73	104	67	94	74	99	78	93	68
57	110	53	116	63	109	58	105	64	115
126	47	130	41	120	48	125	52	119	42
135	32	131	38	141	31	136	27	142	37
9	164	13	158	3	165	8	169	2	159
96	71	92	77	102	70	97	66	103	76
61	112	65	106	55	113	60	117	54	107
122	45	118	51	128	44	123	40	129	50
139	34	143	28	133	35	138	39	132	29

Fig. 15.

[1] See article in *Monist* of April, 1912.

In constructing the final square, Fig. 15, an advance move $-4, -5$ and a break move 1, 1 was used.

It wiil be unnecessary to show examples of higher orders of these squares, as their methods of construction are only extensions of what has been already described. It may be mentioned that these squares when non-associated can be transformed into associated squares by the method given in Messrs. Andrews and Frierson's article.

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SCHENECTADY, N. Y.

POSTSCRIPT ON BUDDHISM AND CHRISTIANITY.

My article on the "Contributions of Buddhism to Christianity," which appeared in *The Monist* of October, 1911, called forth two criticisms in the following number (January 1912). One was by Albert J. Edmunds, "Buddhist Loans to Christianity," pp. 129 ff., and the other by Wilfred H. Schoff, "First Century Intercourse Between India and Rome," pp. 138 ff.

Even before these criticisms reached me, I began to doubt whether my standpoint that Buddhist influences were "not yet to be found in the canonical Gospels, but first in the Apocryphal Gospels," could be maintained in this categorical form.[1] The historical *possibility* for the infiltration of Buddhist material into the canonical Gospels I have never denied, but only its *probability*. I take pleasure in using this opportunity to grant that by the lucid critique of Edmunds the probability of the hypothesis of Buddhist loans in the New Testament has increased in my opinion.

The connection of the Asita-Simeon parallel with the praise of the heavenly hosts in both the Suttanipāta and in the Gospel of Luke has strongly impressed me even though I can not concede to Edmunds that this connection is an "organic" one on both sides. The connection is organic only in the Pali source and not in Luke, where in the second chapter the Simeon story does not stand in an intrinsic connection with the angelic hymn but only *near* it. But even this correspondence is certainly remarkable enough.

The exposition which Edmunds has given of the temptation parallels (Samyuttanikāya and Luke iv. 1-2) also decidedly increases the probability of the loan hypothesis. Because of this the Buddhist origin of some other New Testament stories, to which I have heretofore only with hesitancy granted a remote possibility that they

[1] See my article, "Buddhistisches im Neuen Testament," in *Das Freie Wort*, Frankfort, December 1911, pp. 674 ff.